Human papillomavirus antibody response following HAART initiation among MSM

Combes, Jean-Damien ; Clifford, Gary M ; Egger, Matthias ; Cavassini, Matthias ; Hirsch, Hans H ; Hauser, Christoph ; Calmy, Alexandra ; Schmid, Patrick ; Bernasconi, Enos ; Günthard, Huldrych F ; Franceschi, Silvia ; Waterboer, Tim ; Scherrer, Alexandra U ; Swiss HIV Cohort Study

DOI: https://doi.org/10.1097/QAD.0000000000001354

Human papillomavirus antibody response following HAART initiation among MSM

Combes, Jean-Damien; Clifford, Gary M.; Egger, Matthias; Cavassini, Matthias; Hirsch, Hans H.; Hauser, Christoph; Calmy, Alexandra; Schmid, Patrick; Bernasconi, Enos; Günthard, Huldrych F.; Franceschi, Silvia; Waterboer, Tim; Scherrer, Alexandra U.the Swiss HIV Cohort Study

AIDS: February 20th, 2017 - Volume 31 - Issue 4 - p 561–569
doi: 10.1097/QAD.0000000000001354
Epidemiology and Social

Abstract **Author Information**

Objective: To describe effects of HAART on high-risk human papillomavirus (HPV) antibody response in HIV-positive MSM and the meaning of this response for subsequent HPV-related cancer risk.

Design: Prospective seroepidemiological study of 281 HIV-positive MSM initiating HAART between 1995 and 2004 in the Swiss HIV Cohort Study.

Methods: For each individual, two serum samples, one at HAART initiation (pre-HAART) and another 24 months later (post-HAART), were tested for L1 antibodies to HPV6, 11, 16, 18, 31, 33, 35, 45, 52 and 58, as well as HPV16-E6 antibodies, using a multiplex serology assay. Identification of HPV-related cancer included data linkage with Swiss cancer registries.

Results: Pre-HAART, 45.2% were seropositive for any high-risk HPV-L1 and 32.4% for HPV16-L1. Sexual intercourse during the last 6 months was the only evaluated factor associated with L1 seropositivity pre-HAART. Seropositivity increased post-HAART to 60.5% for any high-risk HPV-L1 [prevalence ratio versus pre-HAART = 1.34, 95% confidence interval (CI) 1.14–1.57] and 48.0% for HPV16-L1 (prevalence ratio versus pre-HAART = 1.48, 95% CI 1.20–1.83), and seroconversion was significantly associated with both lower $CD4^+$ cell count and $CD4^+/CD8^+$ ratio ($P < 0.01$). Only one individual was HPV16-E6-seropositive pre-HAART, but two more seroconverted post-HAART. Anal cancer incidence among the three HPV16-E6-positives post-HAART was significantly increased compared with HPV16-E6-negatives (incidence rate ratio = 63.1, 95% CI 1.1–1211).

Conclusion: HAART-related immune reconstitution increases HPV-specific antibody responses, which may discriminate future anal cancer risk in this high-risk population.

[a]International Agency for Research on Cancer, Lyon, France

[b]Institute of Social and Preventive Medicine, University of Bern, Bern

[c]Division of Infectious Diseases, University Hospital Lausanne, Lausanne

[d]Division of Infectious Diseases and Hospital Epidemiology, University Hospital Basel, Basel

[e]Department of Infectious Diseases, Bern University Hospital, University of Bern, Bern

[f]HIV/AIDS Unit, Infectious Disease Service, Geneva University Hospital, Geneva

[g]Division of Infectious Diseases, Cantonal Hospital St. Gallen, St. Gallen

[h]Division of Infectious Diseases, Regional Hospital Lugano, Lugano

[i]Division of Infectious Diseases and Hospital Epidemiology, University Hospital Zurich, University of Zurich

[j]Institute of Medical Virology, University of Zurich, Zurich, Switzerland

[k]Infection and Cancer Program, German Cancer Research Center, Heidelberg, Germany.

Correspondence to Gary M. Clifford, International Agency for Research on Cancer, 150 Cours Albert Thomas, 69372 Lyon Cedex 08, France. Tel: +33 472738425; fax: +33 472738345; e-mail: clifford@iarc.fr

Received 29 September, 2016

Revised 8 November, 2016

Accepted 14 November, 2016